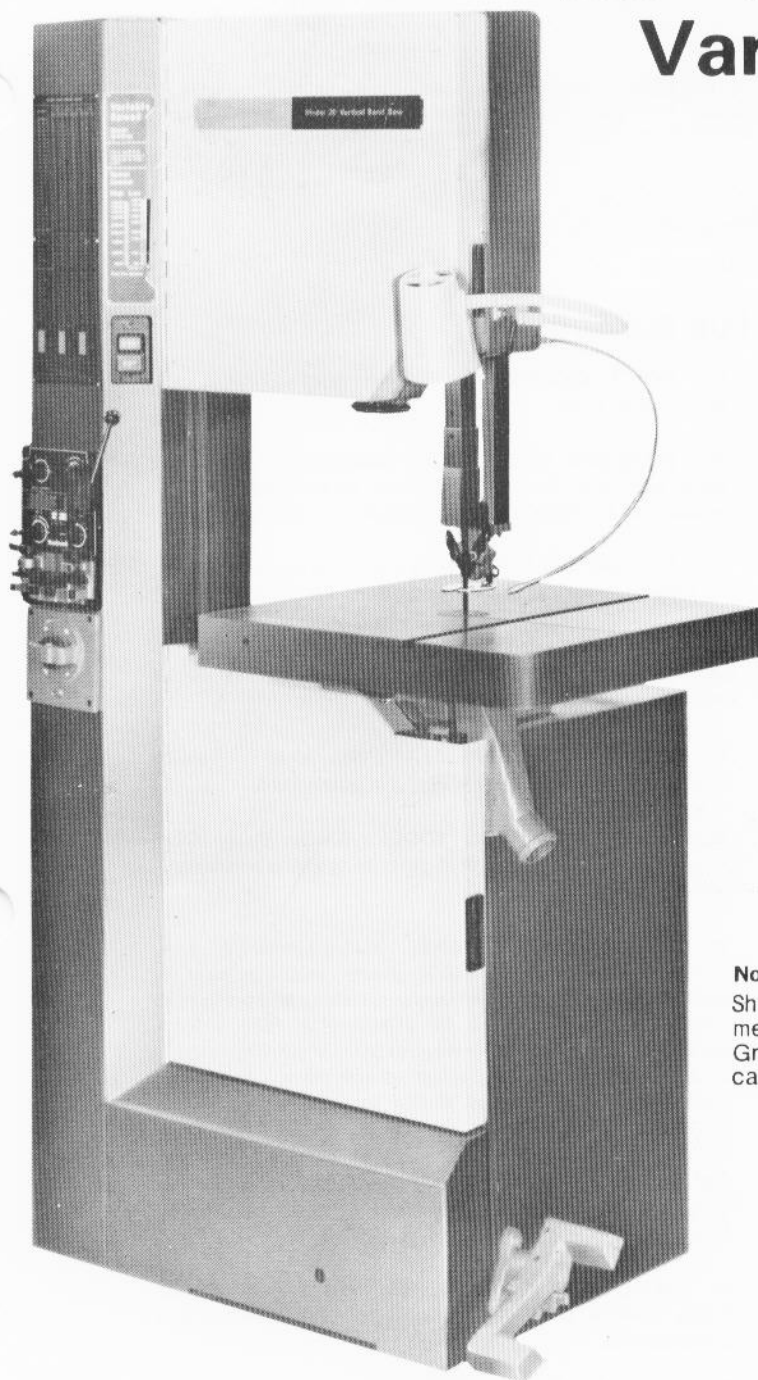


20" Metal-Wood Variable Speed Band Saw



No. 28-345 Band Saw

Shown with Accessory 25-857 Lamp Attachment, 28-701 Blade Welder and Flash Grinder, 28-005 Blade Shear, and Electricals.

Dated 10-15-85

Part No. 426-05-651-0001

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 **DELTA**

WARNING: FAILURE TO FOLLOW THESE RULES MAY RESULT IN SERIOUS PERSONAL INJURY.

As with all machinery there are certain hazards involved with operation and use of the machine. Using the machine with respect and caution will considerably lessen the possibility of personal injury. However, if normal safety precautions are overlooked or ignored, personal injury to the operator may result.

This machine was designed for certain applications only. Delta Machinery strongly recommends that this machine NOT be modified and/or used for any application other than for which it was designed. If you have any questions relative to its application DO NOT use the machine until you have written Delta Machinery and we have advised you.

DELTA INTERNATIONAL MACHINERY CORP.
MANAGER OF TECHNICAL SERVICES
246 ALPHA DRIVE
PITTSBURGH, PENNSYLVANIA 15238

SAFETY RULES FOR ALL TOOLS

1. **FOR YOUR OWN SAFETY, READ INSTRUCTION MANUAL BEFORE OPERATING THE TOOL.** Learn the tool's application and limitations as well as the specific hazards peculiar to it.
2. **KEEP GUARDS IN PLACE** and in working order.
3. **GROUND ALL TOOLS.** If tool is equipped with three-prong plug, it should be plugged into a three-hole electrical receptacle. If an adapter is used to accommodate a two-prong receptacle, the adapter lug must be attached to a known ground. Never remove the third prong.
4. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it "on".
5. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.
6. **DON'T USE IN DANGEROUS ENVIRONMENT.** Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.
7. **KEEP CHILDREN AND VISITORS AWAY.** All children and visitors should be kept a safe distance from work area.
8. **MAKE WORKSHOP CHILDPROOF** - with padlocks, master switches, or by removing starter keys.
9. **DON'T FORCE TOOL.** It will do the job better and be safer at the rate for which it was designed.
10. **USE RIGHT TOOL.** Don't force tool or attachment to do a job for which it was not designed.
11. **WEAR PROPER APPAREL.** No loose clothing, gloves, neckties, rings, bracelets, or other jewelry to get caught in moving parts. Nonslip foot wear is recommended. Wear protective hair covering to contain long hair.
12. **ALWAYS USE SAFETY GLASSES.** Also use face or dust mask if cutting operations is dusty. Everyday eyeglasses only have impact resistant lenses; they are NOT safety glasses.
13. **SECURE WORK.** Use clamps or a vise to hold work when practical. It's safer than using your hand and frees both hands to operate tool.
14. **DON'T OVERRÉACH.** Keep proper footing and balance at all times.
15. **MAINTAIN TOOLS IN TOP CONDITION.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
16. **DISCONNECT TOOLS** before servicing and when changing accessories such as blades, bits, cutters, etc.
17. **USE RECOMMENDED ACCESSORIES.** Consult the owner's manual for recommended accessories. The use of improper accessories may cause hazards.
18. **AVOID ACCIDENTAL STARTING.** Make sure switch is in "OFF" position before plugging in power cord.
19. **NEVER STAND ON TOOL.** Serious injury could occur if the tool is tipped or if the cutting tool is accidentally contacted.
20. **CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to ensure that it will operate properly and perform its intended function - check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
21. **DIRECTION OF FEED.** Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.
22. **NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.** Don't leave tool until it comes to a complete stop.
23. **DRUGS, ALCOHOL, MEDICATION.** Do not operate tool while under the influence of drugs, alcohol or any medication.
24. **MAKE SURE TOOL IS DISCONNECTED FROM POWER SUPPLY** while motor is being mounted, connected or reconnected.

ADDITIONAL SAFETY RULES FOR BAND SAWS

1. **ADJUST** the upper guide about 1/8" above the material being cut.
2. **MAKE SURE** that blade tension and blade tracking are properly adjusted.
3. **STOP** the machine before removing scrap pieces from the table.
4. **ALWAYS** keep hands and fingers away from blade.
5. **CHECK** for proper blade size and type.
6. **DO NOT** attempt to saw stock that does not have a flat surface, unless a suitable support is used.
7. **HOLD** material firmly and feed into blade at a moderate speed.
8. **TURN OFF** machine if the material is to be backed out of an uncompleted cut.
9. **MAKE** "release" cuts before cutting long curves.

INTRODUCTION

All Delta Band Saws are carefully inspected and tested before shipment. While in transit, however, it is possible that the machine may get out of alignment. Therefore before putting the machine into operation give it a careful check and make adjustments where necessary. A carefully set up machine will save you time, trouble and money.

SELECTING FLOOR SPACE

It is important that the Band Saw be set on a solid, level foundation. If rocking occurs, place metal shims at the corners between the cabinet and floor. Lag screws or bolts should be used to secure the machine to the floor.

CLEANING THE BAND SAW

The machined and unpainted surfaces have been protected with a coating of rust preventive. This coating should be removed with a soft cloth moistened with kerosene or mineral spirits. (Do not use acetone, gasoline or lacquer thinner for this purpose.) After cleaning, cover all unpainted surfaces with a light film of good machine oil.

BLADE AND SPEED CHART

The blade and speed chart (A) Fig. 2, aids the operator in selecting the correct blade and speed for cutting many ferrous and non-ferrous metals, also non-metallic materials such as Formica and wood. The chart also gives the minimum cutting radius for different blade widths.

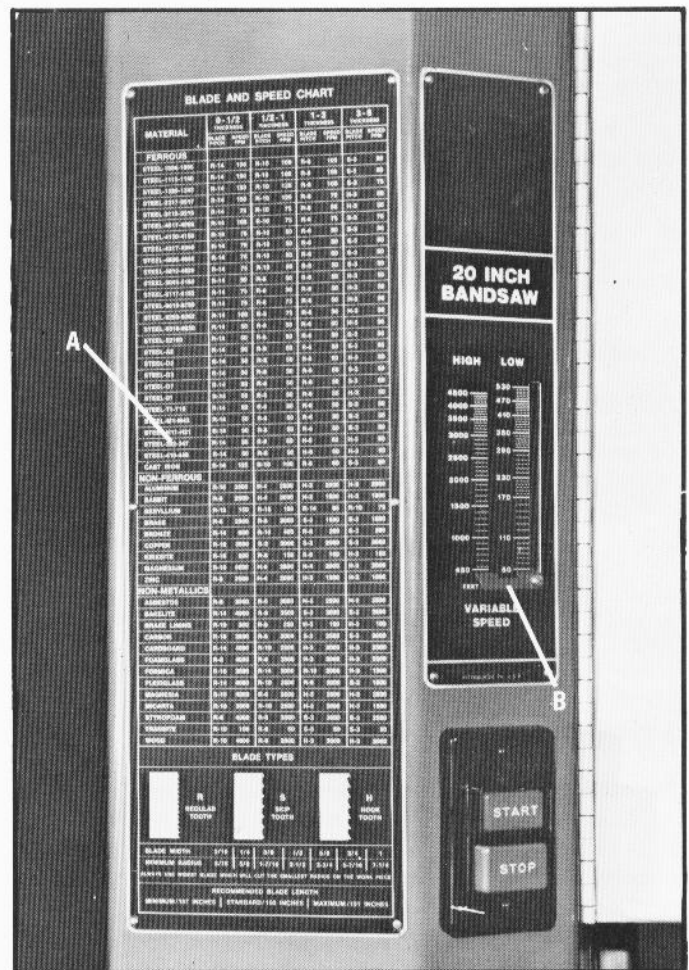
BLADE SPEED INDICATOR

The blade speed indicator (B) Fig. 2, is located at eye level for easy reading. The right-hand column indicates low, back gear blade speeds, 50 to 530 FPM, and the left-hand column indicates high, direct drive speeds, 450 to 4500 FPM.

ADJUSTING BLADE TENSION

The blade is only under slight tension when the band saw is shipped from the factory. This is done to prevent weakening of the blade prior to its use. It is good practice to relax tension on the blade when the machine is not in use. To adjust blade tension, proceed as follows:

1. Turn the blade tension knob (A) Fig. 3, clockwise until the pointer (A) Fig. 4, is on the mark on the tension scale (B), which is equal to the blade width.
2. The tension scale (B) Fig. 4, is correct for standard blades used on average work. It is not affected by variations in blade length and is equally accurate when the blade has been shortened by welding or brazing. Experienced operators may rely upon the feel or tone of the blade for adjusting tension. We recommend the use of the scale to avoid blade breakage, by too much or too little tension. For a blade which is thicker than standard, run the tension pointer slightly higher than the mark on the scale.



TRACKING THE BLADE

For accurate work and maximum blade life, it is important that the blade be centered on the upper wheel. When this adjustment has been properly made, the blade will "track". That is, it will run steadily in the same line. Before the tracking adjustment is made, both the upper and lower blade guides must be moved away from the blade. To "track" the blade, proceed as follows:

1. Disconnect the machine from the power source and make sure that correct blade tension is applied to the blade.
2. Revolve the upper wheel forward slowly by hand and turn the tracking adjustment hand knob (B) Fig. 3, until the blade travels in the center of the upper tire.
3. Connect the machine to the power source and jog the motor switch on and off to be certain that proper tracking is being maintained.
4. Then make any minor final adjustments that may be necessary at operating speed.

NOTE: To avoid the possibility of injury to the blade or operator, the initial tracking adjustment should not be made while the machine is under power, since at high speed the blade may run off the wheel almost instantly. THE TRACKING KNOB SHOULD BE ADJUSTED ONLY A FRACTION OF A TURN AT A TIME AS VERY LITTLE TILT OF THE UPPER WHEEL IS REQUIRED TO DRAW THE BLADE ACROSS THE WHEEL. Each blade has its own tendencies, especially after welding or brazing. The blade tracking adjustment must, therefore, be repeated whenever a new or repaired blade is installed, regardless of previous adjustments.

ADJUSTING BLADE GUIDES

The upper and lower blade guides are to be adjusted only after the blade is tensioned and is tracking properly. The blade guide plates (A) Figs. 5 and 6, are fastened to the blade guide brackets as shown. A total of 28 individual guide plates are supplied to accommodate any blade width up to 1". Guide plates can be added or removed from the blade guide brackets depending on the width of the blade being used, as follows:

1. To add or remove guide plates (A) Figs. 5 and 6, remove the four screws and washers (B). Add or remove the necessary number of guide plates (A) until the front edge of the guide plates are just behind the bottom of the saw blade tooth gullets, leaving all of the set portion of the blade free of the guide. Then tighten the four screws (B). **NOTE:** This adjustment is critical since the teeth of the blade will be damaged if the guide plates are too far forward. If the guide plates are too far back the blade will not be adequately supported.
2. The upper and lower blade guide plates (A) Figs. 5 and 6, should be parallel to each other and as close as possible to the blade without binding it. Rotate the upper wheel by hand, causing the entire length of the blade to pass through the guide plates. This is done to be sure the weld or braze (where extra thickness may be found) will not bind. If necessary, separate the guide plates to accommodate the extra thickness.

ADJUSTING BLADE SUPPORT BEARINGS

1. Loosen the bearing support screw (C) Fig. 5, and adjust the support bearing (D) to within 1/64" of the blades rear edge. In essence, the blade support bearing (D) Fig. 5, should be adjusted as closely as possible to the rear edge of the blade so as not to rotate whenever the blade is running free without cutting. When the blade is cutting it will be pushed back to the rear and the support bearing will then rotate.
2. The lower blade support bearing (D) Fig. 6 is adjusted in the same manner.



Fig. 4

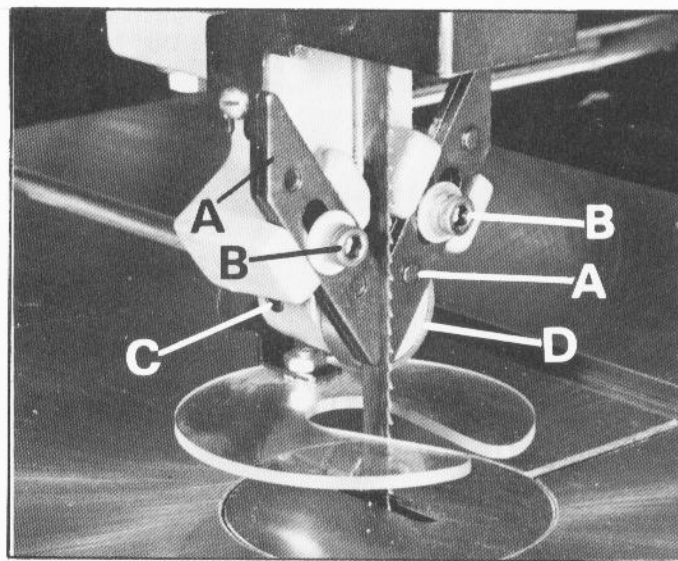


Fig. 5

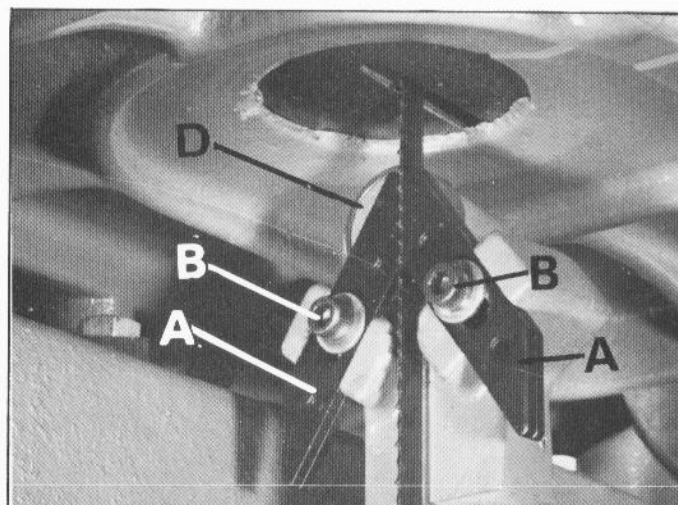


Fig. 6

ADJUSTING BELT TENSION

The correct belt tension is obtained when the distance between the center point of the motor pulley (A) Fig. 7, and the center point of the driven pulley (B) is $18\frac{1}{4}"$.

To adjust belt tension:

1. DISCONNECT BAND SAW FROM POWER SOURCE.
2. Loosen four screws (C) Fig. 7, loosen the nuts that hold motor to motor plate and move motor up or down until the distance between the center points of the pulleys is $18\frac{1}{4}"$.

MAINTENANCE AND LUBRICATION

The gear case has been filled with 1-1/2 qts. of extreme pressure gear oil, Part No. 999-01-013-1210. The oil level in the gear box should periodically be checked by removing plug (D) Fig. 7, and observing if oil level is to the top of the opening. Gear oil may be added at plug (E). Plug (F) Fig. 7, is a drain plug.

All bearings and motors are lubricated and sealed for their life and require no further lubrication.

Clean tires frequently by scraping off accumulations of chips, gum and pitch.

Lubricate sliding parts with a few drops of medium oil, Part No. 999-01-013-1212.

TABLE ADJUSTMENTS

The table may be tilted 45 degrees to the right and 12 degrees to the left. To tilt the table to the left, first tilt it to the right, swing the stop bar (A) Fig. 8, to the rear for clearance, and tilt the table to the left to the desired angle.

Although the table is adjusted at the factory to be at right angle with the blade, this adjustment should be checked out as follows:

1. With the blade under tension, place an accurate square on the table with one end of the square against the flat side of the blade to the rear of the tooth gullets.
2. If the table is not square, left to right, loosen nut (B) Fig. 8, and adjust the set screw (C) up or down as the case may be until the table is square and tighten nut (B).
3. When the table has been set at right angle to the blade, set the pointer on the tilt angle scale to read zero.

CHANGING SPEEDS

To increase speed, simply push forward with the toe on the foot-operated speed changer (A) Fig. 9, and to decrease speed, push down with the heel.

This easy to use control frees operator's hands for positioning work and also saves valuable production time.

Speeds available are 50 to 530 FPM in back gear, and 450 to 4500 FPM in direct drive.

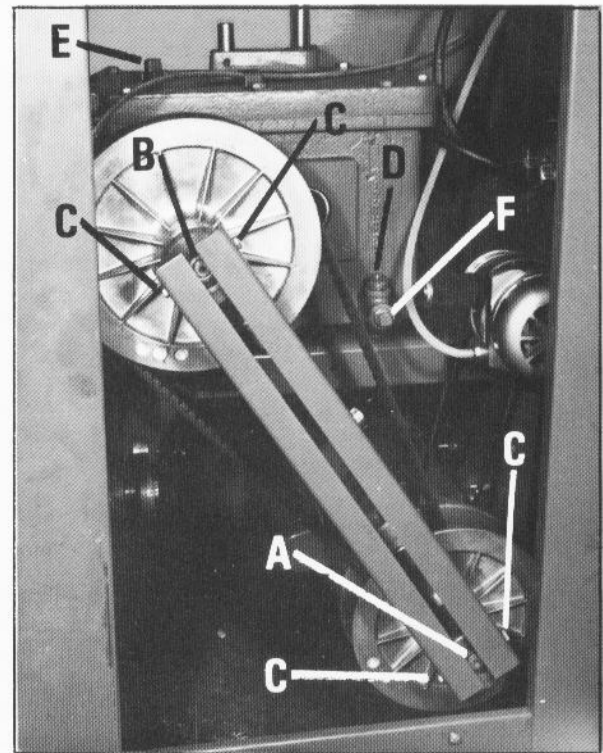


Fig. 7

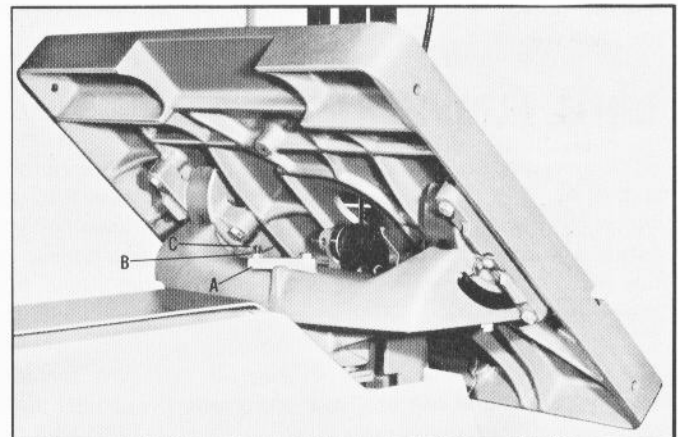


Fig. 8

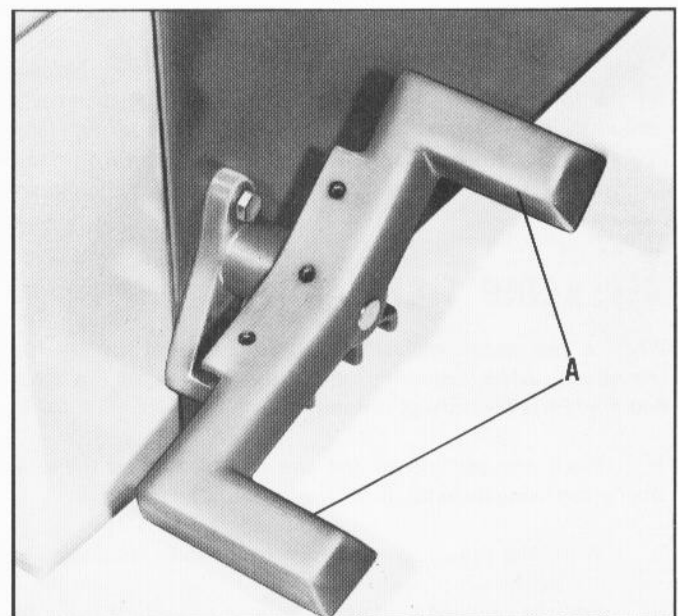


Fig. 9

TABLE INSERT

The table insert is furnished with a little lug or protrusion that fits into the blade removal slot of the table and prevents the insert from vibrating loose and turning.

DRIVE SELECTOR

The "Hi-Lo" drive selector (A) Fig. 10, for shifting transmission from direct drive to back gear, is located out of the way, inside lower cabinet. This prevents accidental shifting while blade is running.

WHEN SHIFTING GEARS, STOP THE MACHINE AND TURN THE LOWER WHEEL BY HAND. THEN MOVE LEVER UNTIL GEARS ENGAGE OR DISENGAGE.

BLADE REMOVAL SLOT

The blade removal slot of the table is furnished with a threaded plug. This plug is used for aligning the front and rear halves of the groove in the table of your band saw. CAUTION: CARE SHOULD BE TAKEN AGAINST EXCESSIVE TIGHTENING OF THIS PLUG SINCE THIS CAN CREATE STRESSES WHICH COULD RESULT IN THE TABLE BECOMING CRACKED.

Whenever the miter gage is used, the plug should be turned just far enough to allow the miter gage bar to slide freely in the table groove.

WHEEL ALIGNMENT

Wheels are adjusted at the factory so that they are both in alignment. The upper wheel slide plate is fastened to the frame with three cap screws and one threaded bushing. This forms a three point mounting feature. If the two wheels are not parallel and in alignment when viewed from above, proceed as follows:

1. Loosen screw (C) Fig. 3, page 3, and turn threaded bushing (D) in and out until the upper wheel is parallel to the lower wheel; then tighten cap screw.
2. The blade must ride in the center of the wheel (on the crown). The upper wheel as explained previously can be tilted for this reason. If the blade is not riding in the center of the lower wheel the wheel can be tilted. The lower wheel mounting plate also contains the three point mounting feature. To adjust, loosen cap screw (215) Fig. 10A, and turn threaded bushing (216) in or out the required amount; then tighten cap screw.

REPLACING TIRES

When a tire needs replacing, first remove the old tire from the wheel. After removing, clean the surface of the wheel, and apply the new tire as follows:

1. Place one portion of the tire completely on the wheel and fasten using a clamp, as shown in Fig. 11.
2. Work the tire onto the wheel by hand as far as possible.
3. Pry the remainder of the tire onto the wheel using two screwdrivers or other suitable instruments, as shown in Fig. 12.



Fig. 10

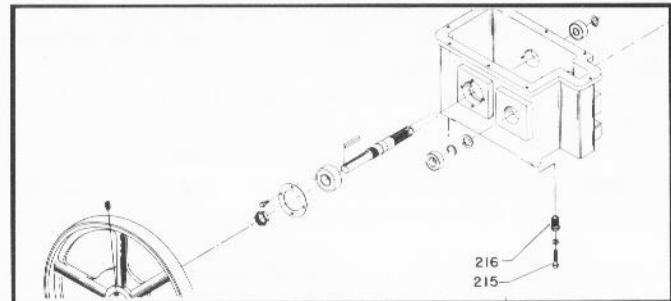


Fig. 10A

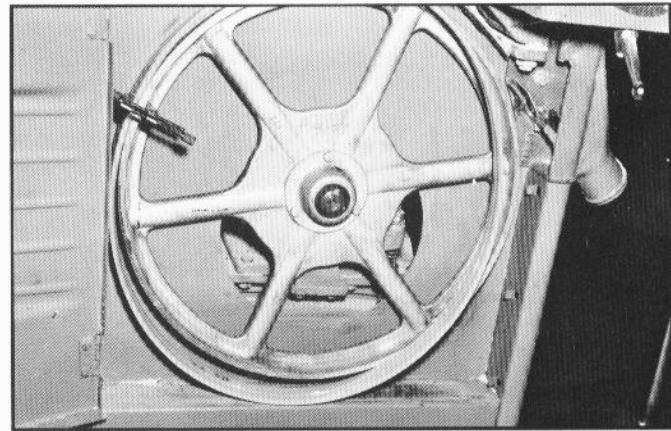


Fig. 11

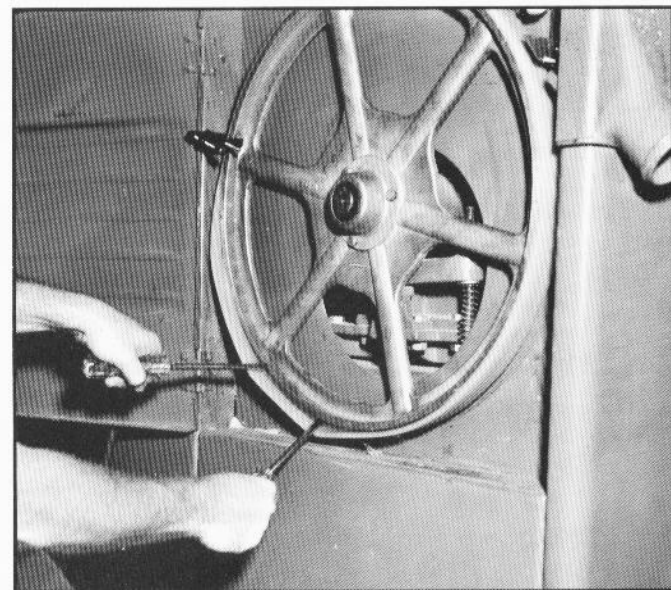
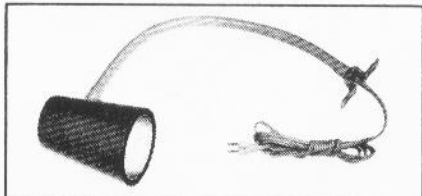


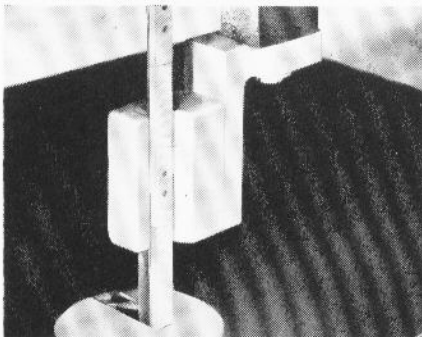
Fig. 12

BAND SAW ACCESSORIES

ACCESSORIES FOR 20" BAND SAWS



No. 25-857 Lamp Attachment, for 115 V. Includes 18" flexible gooseneck, reflector and 6-foot cord with 3-prong grounding type plug. Uses standard bulb (not included) up to 75 watts. 3 lbs.



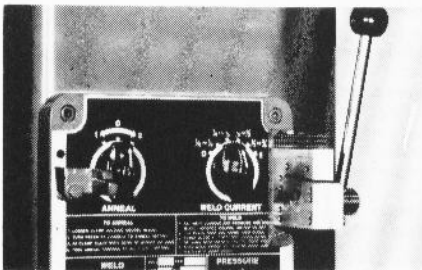
No. 28-700 File Band Guide Attachment. Easily bolts to guide block. Includes mounting hardware. File band and guide block are not supplied by Rockwell.

No. 28-701 Blade Welder and Flash Grinder, 115 V., 50/60 cycles, single phase, 3 KVA. Mounts flush into band saw column. Capacity $\frac{1}{8}$ " to 1". Blade Shear not included; order separately. Factory mounted only.

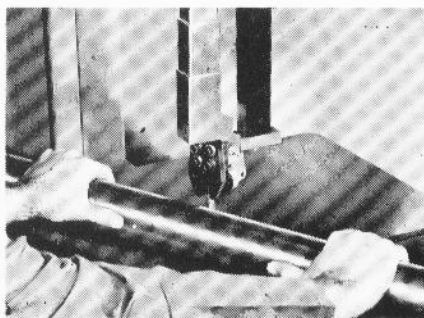
No. 28-702 Blade Welder and Flash Grinder. Same as 28-701 but for 230 V, Single phase. Factory mounted only.

No. 28-714 Blade Welder and Flash Grinder. Same as 28-701, except for field mounting only.

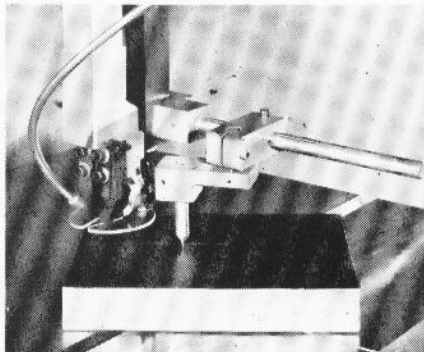
No. 28-715 Blade Welder and Flash Grinder. Same as 28-702, except for field mounting only.



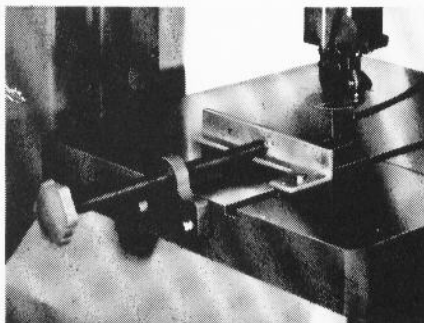
No. 28-005 Blade Shear for mounting on welder face. Capacity to 1".



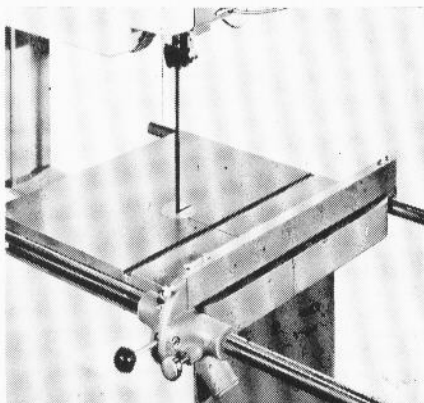
No. 28-703 30° Angle Blade Guides. Consist of blade fingers, back-up bearing and guide block.



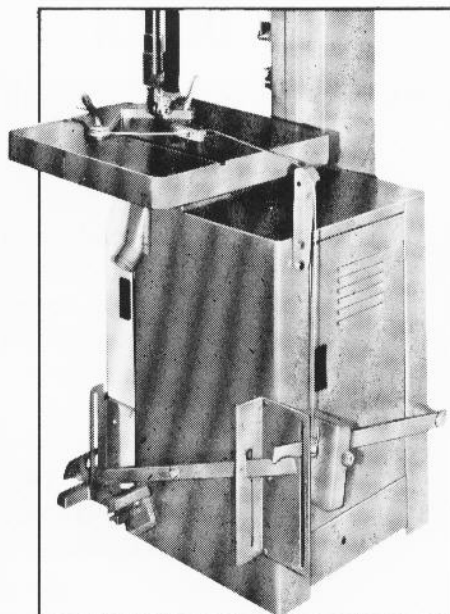
No. 28-704 Circle Cutting Attachment. Attaches quickly to guide arm, permitting radius cuts from $1\frac{1}{2}$ " to 15" in diameter.



No. 28-705 Screw Feed Attachment. Consists of table mounting bracket, screw with handle, and angle feed block.



No. 28-862 Fence Attachment for ripping and re-sawing lumber. Includes $2\frac{1}{2}$ " x 27" Micro-Set fence with front and rear locks, two 44" tubular guide rails, mounting screws. Fence may be set anywhere from $15\frac{1}{8}$ " to left of blade to 25" to right with pointer and calibrations reading from zero to 25" to right.

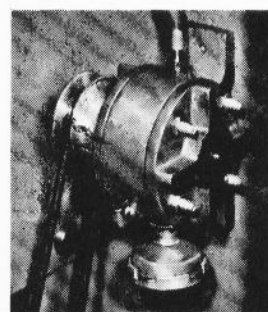


No. 28-708 Gravity Feed Attachment. Used primarily to avoid operator fatigue. Provides a variable feed pressure of approximately 5 to 29 pounds with standard 30-pound weight provided. Enables operator to devote his entire attention to guiding the work, assuring more accurate cutting. (For additional feed pressure, order extra weights.) Fits all past or present Delta 20" Metal Cutting Band Saws.

No. 28-826 Extra Weight. For 28-708 Gravity Feed Attachment. With one extra weight, attachment provides approximately 10 to 41 pounds feed pressure, or with two extra weights, 15 to 50 pounds.

No. 28-709 Chip Blower, factory mounted. Consists of pump with pulley and "O" belt.

No. 28-710 Chip Blower. Same as 28-709 except field mounted.



No. 28-711 Safety Lock-Out Switch, factory mounted. For machines with magnetic controls only. Automatically shuts off power when lower wheel door is opened.

METAL CUTTING BAND SAW BLADES

These are regular set, hard-edge, flexible-back standard blades for cutting all metals. For 20" Metal Cutting Band Saw: All blades are 150" long. 2 lbs.

Number	Width	Minimum Cut. Rad.	Teeth Per In.
28-742	$\frac{1}{2}$ "	$2\frac{1}{2}$ "	10
28-743	$\frac{1}{2}$ "	$2\frac{1}{2}$ "	14
28-744	$\frac{1}{2}$ "	$2\frac{1}{2}$ "	18
28-745	$\frac{1}{2}$ "	$2\frac{1}{2}$ "	24
28-740	$\frac{3}{4}$ "	$5\frac{7}{16}$ "	6
28-741	$\frac{3}{4}$ "	$5\frac{7}{16}$ "	8

ACCESSORY FOR 20" METAL CUTTING BAND SAW

No. 49-159 Variable Speed Belt, 55" O.C.

PARTS DISTRIBUTION CENTERS FOR DELTA INTERNATIONAL MACHINERY

Even quality built equipment such as the Delta machine you have purchased, may require occasional replacement parts to maintain it in good working condition over the years. To order replacement parts, write or call one of the following Delta Parts Distribution Centers:

Van Nuys, CA 91406
16259 Stagg Street
Phone: (818)989-1242

Memphis, TN 38118
4290 Raines Road
Phone: (901)363-8800



Always include the following information:

1. Model No. and Serial No. and all specifications shown on the Model No./Serial No. plate
2. Part number or numbers as shown in the Replacement Parts list supplied with your Delta machine.



Delta Machinery One Year Limited Warranty

Delta Machinery will repair or replace, at its expense and at its option, any Delta machine, machine part, or machine accessory which in normal use has proven to be defective in workmanship or material, provided that the customer notifies his supplying distributor of the alleged defect within one year from the date of delivery to him, of the product and provides Delta Machinery with reasonable opportunity to verify the defect by inspection. Delta Machinery may require that electric motors be returned prepaid to the supplying distributor or authorized service center for inspection and repair or replacement. Delta Machinery will not be responsible for any asserted defect which has resulted from misuse, abuse or repair or alternation made or specifically authorized by anyone other than an authorized Delta service facility or representative. Under no circumstances will Delta Machinery be liable for incidental or consequential damages resulting from defective products. This warranty is Delta Machinery's sole warranty and sets forth the customer's exclusive remedy, with respect to defective products; all other warranties, express or implied, whether of merchantability, fitness for purpose, or otherwise, are expressly disclaimed by Delta.

Part No. 400-06-652-5002